

## PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION  
(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark  
Office  
(Box PCT)  
Crystal Plaza 2  
Washington, DC 20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 10 June 1998 (10.06.98)	Applicant's or agent's file reference RCA 88423
International application No. PCT/US97/18167	Priority date (day/month/year) 08 October 1996 (08.10.96)
International filing date (day/month/year) 08 October 1997 (08.10.97)	
Applicant BLATTER, Harold et al	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

28 April 1998 (28.04.98)

in a notice effecting later election filed with the International Bureau on:

\_\_\_\_\_

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer N. Fischer
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>RCA 88423</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 97/ 18167</b>	International filing date (day/month/year) <b>08/10/1997</b>	(Earliest) Priority Date (day/month/year) <b>08/10/1996</b>
Applicant <b>THOMSON CONSUMER ELECTRONICS, INC. et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1.  Certain claims were found unsearchable (see Box I).
2.  Unity of invention is lacking (see Box II).
3.  The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
  - filed with the international application.
  - furnished by the applicant separately from the international application,
    - but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
  - Transcribed by this Authority
4. With regard to the title,
  - the text is approved as submitted by the applicant.
  - the text has been established by this Authority to read as follows:
5. With regard to the abstract,
  - the text is approved as submitted by the applicant.
  - the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is:
  - Figure No. 1  as suggested by the applicant.
  - because the applicant failed to suggest a figure.
  - because this figure better characterizes the invention.
  - None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/18167

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 H04N9/804

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 505 985 A (KABUSHIKI KAISHA TOSHIBA) 30 September 1992 see page 7, line 49 - page 10, line 14; figures 1-3	1-5, 11-14
A	---	6,7,9, 10,15
X	EP 0 693 858 A (GOLDSTAR CO. LTD) 24 January 1996 see the whole document	1-5, 11-14
A	---	6,7,9, 10,15
	-/-	

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

## ° Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

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Date of the actual completion of the international search

6 March 1998

Date of mailing of the international search report

12.03.98

## Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
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## Authorized officer

Verleye, J

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/18167

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 288 510 A (MITSUBISHI DENKI KABUSHIKI KAISHA) 18 October 1995 see page 30, line 23 - page 36, line 18; figures 1-7D	1-5, 11-14
A	---	6,7,9, 10,15
A	SANG-LAK LEE ET AL.: "Skip Play Technology for Home-Use Digital VCRs" IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, vol. 41, no. 3, August 1995, NEW YORK (US), pages 662-667, XP000539520 see page 662, column 2, line 14 - page 663, column 1, line 18 see page 667, column 1, line 1 - line 23; figure 1 -----	15,18

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 97/18167

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

**1. Claims: 1-5,11-18**

Apparatus for recording and replaying digitally coded video signal bit streams comprising pictures of different types. Reproduction at a speed greater than the normal speed is accomplished by reproducing pictures of a specific type at normal speed and other ones at a speed greater than the normal speed.

**2. Claims: 6-8,10**

Apparatus for recording and replaying an MPEG coded video signal bit stream comprising pictures of different types. First transducing means records and replays the digital signal representative of the MPEG bit stream. Second transducing means records and replays a reference signal combined with a identifying signal indicating the occurrence of an intra coded frame in the MPEG bitstream.

**3. Claim : 9**

Apparatus for recording and replaying an MPEG coded video signal bit stream comprising pictures of different types . A pair of transducers, each aligned, and having complementary azimuth angles, records the MPEG bit stream. The intra coded frame part of the MPEG bit stream is recorded by one of the transducer pair having a specific azimuth angle.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/US 97/18167

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP 505985 A	30-09-92	JP 4298802 A		22-10-92
		EP 0779747 A		18-06-97
		KR 9610857 B		10-08-96
		US 5642460 A		24-06-97
EP 693858 A	24-01-96	KR 9704637 B		29-03-97
GB 2288510 A	18-10-95	JP 8032929 A		02-02-96
		DE 19511246 A		26-10-95

## PATENT COOPERATION TREATY

REC'D 21 JAN 1999  
WIPO PCT

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference RCA 88423	<b>FOR FURTHER ACTION</b>		See Notification of Transmittal of International Preliminary Examination Report (PCT/IPEA/416)
International application No. PCT/US97/18167	International filing date (day/month/year) 08/10/1997	Priority date (day/month/year) 08/10/1996	
International Patent Classification (IPC) or national classification and IPC H04N9/804			
Applicant THOMSON CONSUMER ELECTRONICS, INC. et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 28/04/1998	Date of completion of this report 19.01.99
Name and mailing address of the IPEA/ European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Ibruegger, J Telephone No. (+49-89) 2399-8978



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US97/18167

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-14 as originally filed

**Claims, No.:**

6-10,15-18 with telefax of 28/04/1998

**Drawings, sheets:**

1/5-5/5 as originally filed

2. The amendments have resulted in the cancellation of:

the description, pages:  
 the claims, Nos.: 1-5,11-14  
 the drawings, sheets:

3.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US97/18167

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims 6-10,15-18
	No:	Claims
Inventive step (IS)	Yes:	Claims 6-10,15-18
	No:	Claims
Industrial applicability (IA)	Yes:	Claims 6-10,15-18
	No:	Claims

**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

A. ITEM IV.

1) The application comprises three separate groups of claims the subject-matter of which is not linked as to form a single general inventive concept. The separate groups are:

- Claims 6-8 and 10 relate to an apparatus for recording and replaying an MPEG coded video signal bit stream comprising pictures of different types. First transducing means records and replays the digital signal representative of the MPEG bit stream. Second transducing means records and replays a reference signal combined with a identifying signal indicating the occurrence of an intracoded frame in the MPEG bitstream.
- Claim 9 relates to an apparatus for recording and replaying an MPEG coded video signal bit stream comprising pictures of different types. A pair of transducers, each aligned, and having complementary azimuth angles, records the MPEG bit stream. The intracoded frame part of the MPEG bit stream is recorded by one of the transducer pair having a specific azimuth angle.
- Claims 15-18 relate to a recording and replay apparatus with a trick play reproduction mode in which a play mode is initiated, the average number of control track pulses occurring between I-frames is determined, a trick play mode is selected and control track pulses are counted for determining an average value. In response to a detection of equality between a count and the average the play mode is initiated.

2) The subject-matter of the claims is not linked as to form a single general inventive concept because there is no technical feature or combination of technical features representing a technical relationship among the subject-matter defined by the respective group of claims. For these reasons, the application does not meet the requirements of unity (Rule 13 PCT).

**B. ITEM V.**

3) As far as the claims can be understood at present despite the unclarities comprised in some of the claims (see item VIII below), the subject-matter defined by the independent claims of the respective groups of claims is novel in the sense of Art. 33(2) PCT and involves an inventive step in the sense of Article 33(3) PCT. The claimed subject-matter is industrially applicable.

**4) Claims 6-8 and 10**

EP-A-0 505 985 (D1) represents the closest prior art and discloses a digital recording/reproducing apparatus for MPEG bitstream data which allows that in a special reproduction mode an I picture is reproduced. The subject-matter of claims 6 and 10 is distinguished from D1 in that first transducer records/replays the digital MPEG signal and a second transducer records/replays a reference signal combined with an identifying signal indicating the occurrence of an intracoded frame in the MPEG bitstream. The claimed subject-matter has the advantage that without processing MPEG stream data for redistribution of I frame data a reproduction at other than normal play speed is possible.

**5) Claim 9**

D1 represents the closest prior art. The subject-matter of the claim is distinguished from D1 in that a MPEG bitstream is recorded by a pair of transducers having complementary azimuth angles and in that the intracoded frame part of the MPEG bitstream is recorded by one transducer having a specific azimuth angle. The claimed subject-matter has the advantage that without processing MPEG stream data for redistribution of I frame data a reproduction at other than normal play speed is possible.

**6) Claims 15-18**

D1 represents the closest prior art. The subject-matter of claim 15 is distinguished from D1 by the combination of initiating of a play mode, determining the average number of control track pulses occurring between I-frames, selecting a trick play mode and counting of control track pulses for determining an average value. In response to a

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US97/18167

detection of equality between a count and the average the play mode is initiated. The claimed subject-matter has the advantage that without processing MPEG stream data for forming trick play data a reproduction at other than normal play speed is possible.

**7) Inventive step**

The features in which the respective independent claims are distinguished from D1 are neither disclosed nor rendered obvious by the remaining citations of the International Search Report.

**8) Dependent claims**

The dependent claims meet the requirements of the EPC in conjunction with the respective independent claims.

**B. ITEM VII.**

**9)** Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is/are this/these document/s identified therein.

**10)** The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

**C. ITEM VIII.**

**11)** The application does not meet the requirements of Article 6 and Rule 6 PCT because the formulation of some of the claims lacks clarity.

**a) Claim 6**

**12)** The features of the "*reference signal*" (claim page 15, line 17) are not clear from the formulation of the claim. It is not apparent how the signal is generated and what the reference is.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US97/18167

13) The formulation "*identifying signal for recording said reference signal*" (page 15, lines 19/20) does not clearly define the function of the identifying signal. It is not clear whether the reference signal is recorded regardless of whether the "*identifying signal*" is present or not.

**b) Claim 10**

14) On claim page 16, line 25 it is not clear which "*generating means*" are meant. Possibly the formulation aims to refer back to the means defined in lines 15-17. In such a case a formulation like, for example, "*said generating means*" would overcome the objection.

15) From the formulation of lines 31/32 it is not clear how the control track signal is modified.

**c) Claim 15**

16) The claim defines an apparatus mainly by method steps without revealing the means constituting the apparatus and the configuration of the means.

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## CLAIMS

6. A record and replay apparatus comprising:
  - a source of an MPEG bit stream signal coupled to an 10 input of said apparatus for recording;
  - a first transducing means for recording a digital signal representative of said MPEG bit stream;
  - a control means coupled to said MPEG bit stream signal and generating a signal indicating an intra coded frame occurrence 15 in said MPEG bit stream;
  - a second transducing means for recording and reproducing a reference signal; and,
  - means responsive to said indicating signal for generating an identifying signal for recording with said reference 20 signal.

7. The recording and replay apparatus of claim 6, wherein said first transducing means reproduces said recorded signal in a reproducing mode comprising a sequence of play and fast play 25 modes responsive to a stored sequence of play and fast play mode commands controlled by said control means.

8. The recording and replay apparatus of claim 7, wherein said control means initiates said reproducing mode responsive to 30 said identifying signal coupled from said second transducing means.

9. A recording and replay apparatus comprising:

- a source of an MPEG bit stream signal coupled to said 35 apparatus for recording;
- means coupled to said MPEG bit stream signal for generating a record signal representative of said MPEG bit stream signal;
- a pair of record transducers each aligned for recording 40 said record signal and having complementary azimuth angles; and,

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5 a control means coupled to receive a signal identifying an intra coded frame occurrence in said MPEG bit stream signal and controllably coupled to said generating means, wherein responsive to said identifying signal said control means enabling a record signal representative of an intra coded frame part of said 10 MPEG bit stream for recording by one of said transducer pair having a specific azimuth angle.

10. A recording and replay apparatus comprising:  
a source of an MPEG bit stream signal coupled to said 15 apparatus for recording;  
means coupled to said MPEG bit stream signal for generating a record signal representative of said MPEG bit stream signal  
a record transducer pair having complementary 20 azimuth angles for recording said record signal;  
a recording head coupled to a control track signal generator and generating a control track signal for recording;  
a control means for receiving a signal identifying an intra coded frame occurrence in said MPEG bit stream signal, said 25 control means being controllably coupled to generating means and to said control track signal generator; and,  
responsive to said identifying signal said control means enabling said generating means for coupling a record signal representative of an intra coded frame part of said MPEG bit 30 stream for recording by one transducer of said transducer pair having a specific azimuth angle, and responsive to said identifying signal said control means modifies said control track signal for recording.

15. A recording and replay apparatus with trick play reproduction mode comprising the steps of:

- a) initiating a play mode;
- b) determining an average number of control track pulses occurring between I frames;
- c) selecting a trick play mode;
- d) counting control track pulses to determine an average value;
- e) testing a count for equality with said average number; and,
- f) initiating said play mode at count equality.

16. The recording and replay apparatus of claim 15, wherein said step b) additionally comprises:  
controlling average determination responsive to a  
20 reproduced I frame mark.

17. The recording and replay apparatus of claim 15, wherein said step b) additionally comprises:  
controlling determination of average responsive  
frame indicator decoded from reproduced data.

18. The recording and replay apparatus of claim 15,  
wherein said step d) additionally comprises:  
controlling counting responsive to a reproduced 1  
30 frame mark

AMENDED SHEET



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

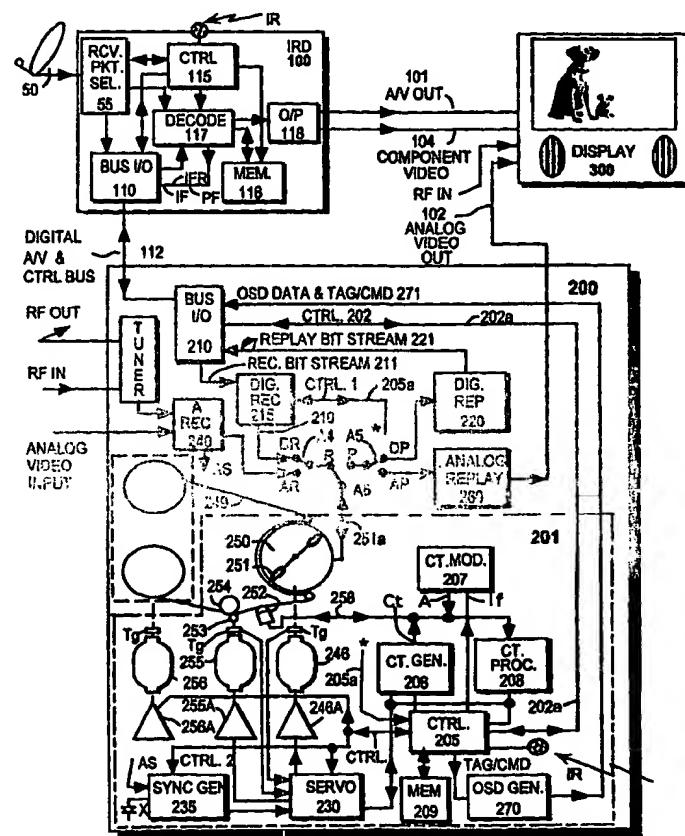
(51) International Patent Classification <sup>6</sup> : <b>-H04N 9/804</b>	<b>A1</b>	(11) International Publication Number: <b>WO 98/16069</b>
		(43) International Publication Date: <b>16 April 1998 (16.04.98)</b>

(21) International Application Number: <b>PCT/US97/18167</b>	(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).
(22) International Filing Date: <b>8 October 1997 (08.10.97)</b>	
(30) Priority Data: 9620923.4 8 October 1996 (08.10.96) GB	
(71) Applicant (for all designated States except US): THOMSON CONSUMER ELECTRONICS, INC. [US/US]; 10330 North Meridian Street, Indianapolis, IN 46290-1024 (US).	
(72) Inventors; and	Published
(75) Inventors/Applicants (for US only): BLATTER, Harold [US/US]; 2220 Brewster Road, Indianapolis, IN 46260 (US). HORLANDER, Karl, Francis [US/US]; 2713 Grassy Creek Court, Indianapolis, IN 46229 (US). McLANE, Michael, Joseph [US/US]; 720 Sherwood Drive, Indianapolis, IN 46240 (US).	With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
(74) Agents: TRIPOLI, Joseph, S. et al.; GE & RCA Licensing Management Operation, Inc., P.O. Box 5312, Princeton, NJ 08543 (US).	

## (54) Title: DIGITAL RECORDER WITH TRICK PLAY OPERATION

## (57) Abstract

A record and replay apparatus (200) comprises a transducing means (251) for reproducing a digital signal (221) from a medium (249). A control means (205) controls a reproduction mode of the apparatus. A decoding means (117) is coupled to the transducing means (251) for decoding the digital signal (221) and deriving therefrom a signal (IF) indicative of a specific picture type. The reproduction mode has a first period of reproduction at a normal play speed and a second period of reproduction at a speed greater than the play speed. The first and second periods alternating with the first period initiated responsive to the signal (IF) indicative of a specific picture type. In a further arrangement a first transducing means (251) records an MPEG signal. A control means (205) generates a signal (A), indicating an intra coded frame occurrence in the MPEG bit stream, which is recorded by a second transducing means (252) together with a servo reference signal.



**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
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CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LJ	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		

## INTERNATIONAL SEARCH REPORT

Intern. Application No  
PCT/US 97/18167A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 H04N9/804

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 505 985 A (KABUSHIKI KAISHA TOSHIBA) 30 September 1992 see page 7, line 49 - page 10, line 14; figures 1-3	1-5, 11-14
A	---	6,7,9, 10,15
X	EP 0 693 858 A (GOLDSTAR CO. LTD) 24 January 1996 see the whole document	1-5, 11-14
A	---	6,7,9, 10,15
		-/-

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

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Date of the actual completion of the international search  6 March 1998	Date of mailing of the international search report  12.03.98
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  Verleye, J

## INTERNATIONAL SEARCH REPORT

Internal Application No  
PCT/US 97/18167

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 288 510 A (MITSUBISHI DENKI KABUSHIKI KAISHA) 18 October 1995 see page 30, line 23 - page 36, line 18; figures 1-7D	1-5, 11-14
A	---	6,7,9, 10,15
A	SANG-LAK LEE ET AL.: "Skip Play Technology for Home-Use Digital VCRs" IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, vol. 41, no. 3, August 1995, NEW YORK (US), pages 662-667, XP000539520 see page 662, column 2, line 14 - page 663, column 1, line 18 see page 667, column 1, line 1 - line 23; figure 1 -----	15,18

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 97/18167

### Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

#### Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-5,11-18

Apparatus for recording and replaying digitally coded video signal bit streams comprising pictures of different types. Reproduction at a speed greater than the normal speed is accomplished by reproducing pictures of a specific type at normal speed and other ones at a speed greater than the normal speed.

2. Claims: 6-8,10

Apparatus for recording and replaying an MPEG coded video signal bit stream comprising pictures of different types. First transducing means records and replays the digital signal representative of the MPEG bit stream. Second transducing means records and replays a reference signal combined with a identifying signal indicating the occurrence of an intra coded frame in the MPEG bitstream.

3. Claim : 9

Apparatus for recording and replaying an MPEG coded video signal bit stream comprising pictures of different types . A pair of transducers, each aligned, and having complementary azimuth angles, records the MPEG bit stream. The intra coded frame part of the MPEG bit stream is recorded by one of the transducer pair having a specific azimuth angle.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

Intern: Application No

PCT/US 97/18167

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP 505985 A	30-09-92	JP 4298802 A		22-10-92
		EP 0779747 A		18-06-97
		KR 9610857 B		10-08-96
		US 5642460 A		24-06-97
EP 693858 A	24-01-96	KR 9704637 B		29-03-97
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		DE 19511246 A		26-10-95